
VICTORIAN ENTOMOLOGIST

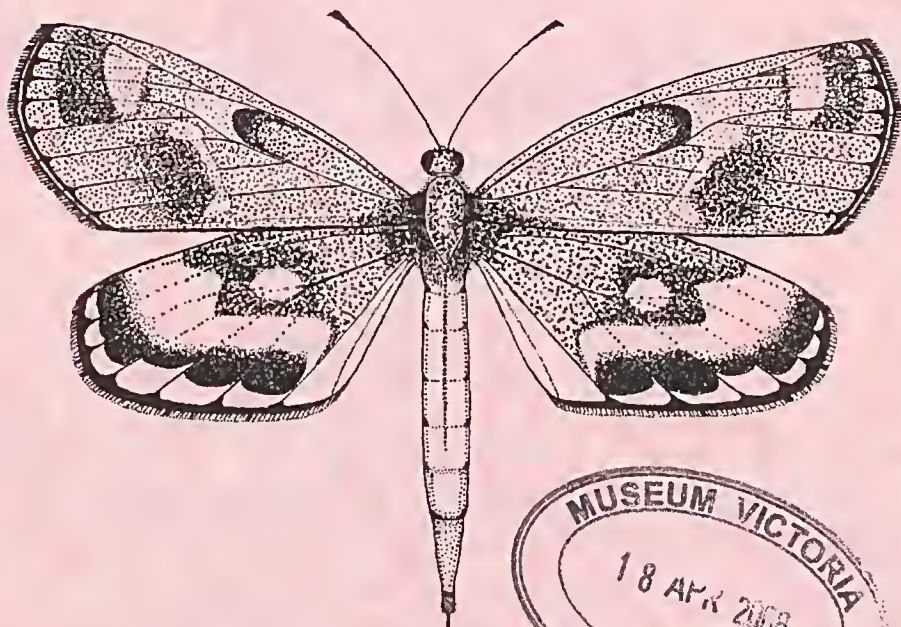


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News Bulletin of The Entomological Society of Victoria Inc.

MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

- (a) to stimulate the scientific study and discussion of all aspects of entomology,
- (b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
- (c) to compile a comprehensive list of all Victorian insect species,
- (d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at the 'Discovery Centre', Lower Ground Floor, Museum Victoria, Carlton Gardens, Melway reference Map 43 K5 at 8 p.m. on the third Tuesday of even months, with the exception of the December meeting which is held on the second Tuesday. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS (2008)

Ordinary Member	\$30 (overseas members \$32)
Country Member	\$26 (Over 100 km from GPO Melbourne)
Student Member	\$18
Electronic (only)	\$20
Associate Member	\$ 7 (No News Bulletin)
Institution	\$35 (overseas Institutions \$40)

Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

LIFE MEMBERS: P. Carwardine, Dr. R. Field, D. Holmes, Dr. T. New, Dr. K. Walker.

Cover design by Alan Hyman.

Cover illustration: The pale Sun Moth, *Synemon selene* Klug, is an endangered species restricted to perennial grassland dominated by *Austrodanthonia* in Western Victoria. It is now extinct in SA, and was presumed extinct in Vic. until its rediscovery, in February 1991, by the late Frank Noelker and Fabian Douglas. The Victorian Populations are parthenogenetic with all specimens comprising females, a most unusual trait in the Castniidae. Illustration by Michael F. Braby.

Minutes of the General Meeting 19 February 2008

Present: P. Carwardine, S. Curle, V. Curle, P. Marriott, D. Stewart,
P. Lillywhite, K. Harris, I. Endersby, M. Endersby, G. Weeks, L. Gibson,

Visitors: Andrea Canzano, Simon Hoey

Apologies: D. Dobrosak, D. Stewart

Correspondence:

- The society has received the latest Australian Journal of Entomology 47(1), 2008 and Myrmecia 44(1) January 2008.



ICE 2008
XXIII International Congress of Entomology
July 6-12, 2008 Durban South Africa
"Celebrating Entomology: Contributions to Modern Science"

Congress News: February 2008
www.ice2008.org.za

- **Memo to FASTS Presidents, FASTS Board, FASTS Editors, FASTS CEO**

Greetings

Registrations for Science meets Parliament are now open. Please ask your nominees to log on the following url to register. Registrations will close on Friday 22nd of February.

<http://www.fasts.org/smp-registration/index-smp2008.php>

Please refer to the website for further details.

Treasurers Report:

No report available.

Editors report:

No report available.

General Business:

Andrea Canzano

Andrea gave us a wonderful presentation of the "Ecology of *Paralucia pyrodiscus lucida*, the Eltham Copper butterfly"; which forms the basis of her thesis which is nearing completion.

Including illustrations regarding the ant and parasitic wasps that have been discovered too. Andrea's presentation generated much interest and discussion throughout.

Membership

- Jill Dawson duly elected as a member of the society. Jill is interested primarily in insect pollinators of native plants.
- Received nomination for new members:
 - o Miss Jenny Holmes of Ararat- Jenny is interested in Lepidoptera.
 - o Dr Tom Shakespeare from NSW.; Tom also has an interest in Lepidoptera.

Meeting closed at 21:25

Minutes of the Council Meeting 18 March 2008

Present: P. Carwardine, S. Curle, I. Endersby, P. Marriott, D. Dobrosak,
P. Lillywhite,

Apologies: D. Stewart, K. Walker

Minutes:

Minutes of the Council Meeting [Vic.Ent. 37(6): 85] were accepted. I.Endersby, D. Dobrosak.

Correspondence:

- The society has received the following email from Didier Goffin:

Subject Diptera exchange

Dear Mr Dobrosak,

I'm a member of the Royal entomological Society of Belgium (amateur). I wonder if one of your amateur member would be interested by few exchange of flies. My collection comes from Europe. Could you ask the question to your members?

Thank you in advance for your help.

Best wishes, Didier Goffin (didiergoffin@hotmail.com)

We understand that a customs declaration form needs to be sent from a recognised society or institution, to another similar recognised society or institution. As an organisation, it was felt that we could not take part in doing this, but we would publish the email in the magazine as part of these minutes allowing individuals to make contact direct.

- World Environment Day Awards – call for nominations correspondence received. Nominations for the World Environment Day Awards 2008 are now open nationally. The United Nations Association of Australia World Environment Day Awards is a national awards program which recognizes businesses, local governments, organisations, community groups, individuals, schools and the media whose work serves to protect, manage or restore the environment. For complete guidelines, entry criteria and nomination forms, please visit the website:
www.unaavictoria.org.au
Nominations close Friday 2 May, 2008.

- Australian Natural History medallion. The Australian Natural History Medallion is awarded annually in recognition of services to Australian natural history. It is administered by the Field Naturalists Club of Victoria Inc.
Any person shall be eligible for the Award who, within the preceding ten years, has increased popular and/or scientific knowledge of Australian natural history (biological or physical)
From this meeting, after some discussion, there was no strong feeling of any particular individuals who would be nominated at this time. We would like to hear from members should they have nominee's that they would like to put forward.
- 1st May deadline for nominations.
- We have been invited to review the latest bug book – Bugs Alive. I. Endersby to review the book on behalf of the society.
- The Australian Entomological Society, 39th Annual General Meeting and Scientific Conference 2008. This years meeting will be held at the Orange Agricultural Institute, Orange, New South Wales
28th September - 1st October 2008 . <http://aes2008.org/>

The Australian Entomological Society, call for Nominations of Office Bearers and Councillors. S.Curle to email members informing them of this requirement, should they will to be nominated.
- We have received the brochure for the Australian Museum annual invertebrate photographic competition; called Up Close & Spineless, helping to raise awareness of the wonderful world of invertebrates. Entry fee applies. Entry form and full details on the Australia Museum website: http://www.amonline.net.au/up_close/competition.htm
Deadline: Friday 29th August 2008.
- Entomological Society of New Zealand annual meeting (13-16 April 2008 in Christchurch):
We would be delighted to have participants from Australia and you are most welcome to join us. The theme of the conference is "Insects and Global Change - Consequences of species invasions, climate change, and land-use change".
Abstract submission is set to close 7 March. Information on the conference, registration and abstract submission can be found on the website at:
<http://www.ento.org.nz/meetings.htm>
Abstracts should be submitted as a word document of less than 500 words to conference@ento.org.nz
Our apologies for the short notice, in case this conference has not been communicated to you earlier.
- Moths in Australia Newsletter 6 received. This article will be attached to the electronic bulletin.

Treasurers Report:

- The books are still at the auditors and should be back with us by the end of March 08.
- We have been able to again this year donate \$70 donation to science talent quest bursaries, nominated and seconded at the meeting.

- Commonwealth Bank has changed the way that they are paying interest on their accounts. Essentially, they are now paying 3.2% for up to a balance of \$9,999, and 7.2% for \$10,000 and over. We initially only had \$9000 in this account, which has been manipulated from the General Account to ensure we now have the \$10,000 needed to take advantage of this significantly higher interest rate.

It does mean however that we are low on funds in the General Account now and we need to impress upon our members the importance of paying the renewals on time please.

- With the subs due in the 1st January, 33 people have yet to pay this year's membership renewal. Come on chaps, that's 3 months overdue!

I. Endersby to send out reminder due to tight nature of this year's accounts.

Editors report:

We have sufficient material for the next article. Thanks to Danny for getting the last issue out in time for the holiday season. Uptake of the electronic version has been slow.

General Business:

AGM:

I. Endersby to notify members of the upcoming AGM and the call for nominations by email. I. Endersby to distribute the agenda to the council prior to the meeting.

We have a guest speaker on the evening of the AGM. The AGM and General meeting of the night will be split apart to ratify the minutes for each.

I. Endersby is prepared to stay in the council for 1 more year and will then be standing down. Ian fulfils the role of treasurer & public officer AES Representative Councillor (write for the AES Myrmecia once a quarter).

D. Dobrosak is looking to stand down this year from the position of Editor. Daniel has performed this sterling role now for some 15 years and would like to resign from this position.

We have scope for more councillors in the society, and we are seeking a suitable replacement for Daniel when he stands down. Expressions of interest for either council or Editor can be emailed to anyone in the council or directly to the secretary (secretary@entsocvic.org.au).

Also due to be on the agenda for the AGM is the recognition that we have 2 inactive committee's : Conservation Committee and Entrecs. Whilst we are looking to drop the Entrecs business name, we may look to retain the roles.

Current office bearers:

PRESIDENT:	Peter Marriott
VICE-PRESIDENT:	Peter Carwardine
HON. SECRETARY:	Steve Curle
HON. TREASURER:	Ian Endersby
HON. EDITOR:	Daniel Dobrosak
EXCURSIONS SEC:	Peter Carwardine
PUBLIC OFFICER:	Ian Endersby
PAST PRESIDENT:	David Stewart
COUNCILLORS:	Dr. Ken Walker
	Peter Lillywhite

Publication of members details / interests:

In the interest of trying to get people with common interests together, and sharing knowledge and information, we are planning to publish a list of people's names (only names) and areas of interest in the next issue of the news bulletin.

Anyone who does not wish their name and area of interest published in the next bulletin, please email the secretary ASAP.

Should anyone wish to contact another member, please email the secretary who will be able to initiate this communication (secretary@entsocvic.org.au)

University of Canterbury (NZ) request scan Vic Ent article

From the previous council meeting:

The article that has been requested is the "Crosby DF, 1978 Glow Worm" from the Victorian Entomologist volume 8 part 6 pages 56-58.

The University of Canterbury in New Zealand have a contract to digitise all of the known literature pertaining to New Zealand terrestrial invertebrates from 1775 to 1993. P. Marriott to contact the author David Crosby for consent to send this information to the university. No objections from the council to disseminate this information.

Dave Crosby has given his consent for this; the secretary to inform the University of Canterbury.

Publication of booklet on collecting methods

Positive feedback from the council regarding this future publication. The diagrams need to be updated and in some cases redrawn. D. Dobrosak has offered to assist Ian in doing this.

Publication of Victorian Lepidoptera

The proposed publication aiming to illustrate every Victorian Lepidoptera species will be in two parts. The first part will be a booklet with mainly illustrations. There will be scaled pages illustrating each recorded species and habitus pages showing resting positions where these are available. The second part will be a CD pinned specimens showing both sexes will be presented with label data. Habitus shots will expand on what was available in the booklet. There will also be data on distribution, flight times and biological information where known. The series will, of necessity, come out in parts beginning with Bombycoidea and proceeding to Noctuoidea. The concept is to link in with the VicEnt checklist on the web but provide a booklet that can be hand held in the field or at leisure. The two will be compatible.

The Norman Wettenhall Foundation provide funding for projects that provide environment awareness.

As the publication if a series as opposed to a single item, the museum would not be able to fund this.

Proposal to the society is for the organisation to support Peter with these publications, - which in essence is purely receiving monies and writing cheques; of course adding a surcharge for this service in the publication of the book. They would thus be a society publication with the required foundation sponsorship material acknowledged within the publication.

I. Endersby to discuss the financial logistics with Wettenhall.

D. Dobrosak moved to support this publication, seconded by P. Carwardine.

Field Naturalists Club of Victoria's Terrestrial Invertebrate Group (TIG):

P. Marriot to ensure the TIG has details of out forthcoming agenda.

Forum for data recording:

P. Marriott to put a paper together for this next magazine for discussion at the next council meeting.

It is understood that K. Walker also has a whole range of these things with developing technologies of what's happening on the web. This meeting needs to also ensure that concern surrounding the continuity of information once existing publisher moves on is addressed.

The meeting, to be held in August, will need a moderator and co-ordinator.

I. Endersby will provide input for what we need to do to bring this together.

P. Marriott to progress further with P. Lillywhite and K. Walker.

Dragonfly Society:

S.Curle approached the local dragonfly study group to progress relations though this currently seems to have fallen silent.

Promotional Flyers:

It has come to light that we have run down to very few leaflets to advertise the society. I. Endersby will be giving a guided walk in a few weeks at the Mullum Mullum festival and needs some to be reproduced. D. Dobrosak to distribute electronic copy to council members for updates, to be returned to Daniel ASAP for printing. These need to be with Ian before the end of March 08.

Meeting Presenters:

It was agreed as to offer as a small token of our appreciation, a free membership subscription to the society for individuals presenting their material at the members meetings.

Next Meetings:

Nature Illustrations – P. Lillywhite to check with Enid Mayfield for doing this presentation. Peter will also check with Tiffany to also present at this meeting.

I. Endersby suggested we should invite the Wildlife Artists of Australia should the presentations be going ahead as planned. Ian has contacts for this.

Excursion – we have a tentative invitation and tentative approval from the boss of the inviter; plausible to have an evening weekday meeting. I. Endersby to follow up Luke Watson to set date in stone for normal meeting night.

2008:			
Month	Date	Planned event	
April:	15 th	AGM Members meeting	Includes presentation from Melanie Birtchnell – Drunken Honeybee's
May:	20 th	Council meeting	
June:	17 th	Members meeting	Nature Illustration – insects that pollinate plants.
July:	15 th	Council meeting	
August:	19 th	Members meeting	Proposed forum for data recording meeting
September:	16 th	Council meeting	
October:	21 st	Members excursion	Excursion. Date may change slightly allowing for excursion. Potential visit to AQIS at Tullamarine.
November:	18 th	Council meeting	
December:	9 th	Members meeting	Please note, December's meeting date is 2 nd Tuesday of December to try and avoid Christmas celebrations.

Meeting closed at 19:07

Range Extension Records for Various Butterflies throughout Australia

Frank Pierce, PO Box 121, Kangaroo Ground, VIC 3097. email: fpandjm@netspace.net.au

Introduction

Whilst travelling throughout Australia during the last three years 41 butterflies were recorded outside their normal range as indicated in Braby 2004. Photographs of adequate quality to confirm identification were taken in all cases except one.

These records occurred on touring-camping trips from Melbourne to southwest Western Australia in 2005, Cape York in 2006 and the Kimberley and Top End in 2007. The main focus of these trips was to find species and subspecies of birds that had not been seen by the author on previous trips.

Methods

All butterfly sightings were opportunistic. There were no destinations targeted specifically to find butterflies. When a butterfly was seen it was photographed, if possible. The images were then used (usually at the night-time camp) to identify the species from Braby 2004. A large magnifying glass was often used for detailed inspection of the images in the field guide.

No attempts were made to catch any butterflies by netting or any other means.

Trip lists were kept for the butterflies seen and 'out-of-range' sightings were noted on these lists.

Photos were taken with a hand held Canon Powershot S3-IS compact digital camera, generally set at x48 (x12 optical and x4 digital; which is equivalent to a 1728 lens for a 35mm film) at a distance of 900mm minimum. Digital zooming was necessary for the butterfly image to sufficiently fill the screen to ensure focusing on the butterfly rather than background items.

Results

Details of the sightings are listed in Table 1, including the approximate 'out-of-range' (OoR) distance and direction from the closest edge of the range shown in Braby 2004.

Two possible first records for WA, where the species range in Braby 2004 does not extend to that State, are noted in Table 1.

Discussion

These records, by one so inexperienced with butterflies, were only possible because of the recent availability of such a comprehensive field guide as Braby 2004 and such a powerful compact digital camera which can be so conveniently carried in a soft case on the waist.

A photo for each record (except one) was included with the submission of this article to enable a referee to verify the author's identifications.

The author is aware that experienced butterfly enthusiasts prefer the use of Latin names for reference to species; however the use of the common names is much easier for those at the bottom of the learning curve.

Acceptance of the common names used in Braby 2004 eliminates ambiguity and makes 'butterflying' more accessible to the public. This facilitates contributions to the general body of knowledge; such as this record.

References

Braby, M. 2004. The complete field guide to the Butterflies of Australia. CSIRO Publishing, 340 pages.

TABLE 1

SPECIES

LOCATION

DATE

LAT.

LONG.

OoR

WA-05

Common Grass-blue	N of Leonora	16-09-05	~28s	~120 30e	200N
Yellow Admiral	Wanjarri CP n of Leinster	16-09-05	27 24s	120 39e	100W
Yellow Admiral	Nallan Station-20k n of Cue	18-09-05	27 19s	117 58s	200N
Yellow Admiral	Nallan Station-20k n of Cue	19-09-05	27 19s	117 58s	200N

QLD-06

Glasswing	Fullaton R. w of Julia Creek	16-06-06	20 38s	141 10e	200NE
Two-spotted Line-blue	Fullaton R. w of Julia Creek	16-06-06	20 38s	141 10e	50N
Blue Argus	Bourke & Wills Roadhouse	17-06-06	19 14s	140 22e	100N
Blue Argus	Flinders R. s of Normanton	17-06-06	18 11s	140 52e	300NorW
Blue Argus	Karumba	19-06-06	17 28s	140 50e	250W
Saltbush Blue	Karumba	19-06-06	17 28s	140 50e	400NorNW
Lyell's Swift	Karumba	20-06-06	17 28s	140 50e	300EorW
Dainty Grass-blue	20k w Georgetown	22-06-06	18 18e	143 21s	100W

NT/WA-07

Saltbush Blue	Newhaven to Yuendumu	10-06-07	22 25s	131 20e	30W
Common Grass-blue	Newhaven to Yuendumu	10-06-07	22 25s	131 20e	100W
Common Grass-blue	160k nw of Rabbit Flat	11-06-07	19 45s	128 40e	400S
Two-spotted Line-blue	160k nw of Rabbit Flat	11-06-07	19 45s	128 40e	50N
Spotted Dusky-blue	Balgo /Tanami Rds	11-06-07	19 41s	128 14e	20E
Saltbush Blue	Lake Gregory	12-06-07	20 09s	127 31e	400NW
Common Grass-blue	Lake Gregory	12-06-07	20 20s	127 25e	400SorSE
Lemon Migrant	Canning Stock Route	13-06-07	20 21s	126 59e	150SE
Saltbush Blue#	Canning Stock Route	13-06-07	20 21s	126 59e	550NW
Orange Ringlet	Windjana Gorge	16-06-07	17 25s	124 57e	100SE
Pale Pea-blue	Windjana Gorge	16-06-07	17 25s	124 57e	300S
Speckled Line-blue	Windjana Gorge	16-06-07	17 25s	124 57e	200NE
Speckled Line-blue	Charnley River Station	18-06-07	16 43s	125 28e	200SW
Black-spotted Grass-blue	Charnley River Station	18-06-07	16 40s	125 30e	200W
Dainty Grass-blue*	Charnley River Station	21-06-07	16 43s	125 28e	700SW
Pale-orange Darter	Charnley River Station	22-06-07	16 43s	125 28e	600SW
Two-spotted Line-blue	Charnley River Station	23-06-07	16 43s	125 28e	50S
Pale Pea-blue	Charnley River Station	23-06-07	16 43s	125 28e	150S
Small Dusky-blue	Drysdale River	29-06-07	15 42s	126 26e	100W
Dusky Knight*	Ngoolallah Creek	30-06-07	14 50s	126 17e	400W
Two-brand Crow	Rainforest Mitchell Plateau	3-07-07	14 37s	25 48e	300NEorW
Small Brown Crow	Rainforest Mitchell Plateau	4-07-07	14 37s	25 48e	150NE
Purple Line-blue	Mitchell Falls Camp	4-07-07	14 19s	125 43e	150NEorNW
Black-spotted Grass-blue	Keep River NP	13-07-07	15 50s	129 07e	20E
Small Dusky-blue	Keep River NP	13-07-07	15 50s	129 07e	20E
Two-spotted Line-blue	Limmen Bight River Camp	6-08-07	15 14s	135 32e	600N
Speckled Line-blue	Limmen Bight River Camp	6-08-07	15 14s	135 32e	250E
Two-spotted Line-blue	Limmen NP	8-08-07	15 48s	135 27e	550N
Spotted Grass-blue	Davenport Ranges NP	11-08-07	20 39s	134 46e	400SW
Spotted Grass-blue	Davenport Ranges NP	12-08-07	20 45s	135 11e	400SW

No photograph for this record

* First Record for WA?

Insect Collections and Saturated Vapour Pressure

Ted Edwards

56 Lachlan Street, Macquarie, 2614, ACT

The physics of vapour pressure impinges on the management of insect collections in several major ways. It is important that curators understand the physics of vapour pressure in order to adequately manage the collections of which they are in charge.

Vapour pressure is important in the protection of collections from museum beetles by the use of deterrents such as naphthalene or camphor. It is important in avoiding destructive recrystallisation on fragile specimens and it is important for the effective operation of relaxing jars to process specimens. It is also important in preventing mould growth or the "springing" or sagging of set specimens.

For Occupational Health and Safety (OH&S) purposes the way to cut down the vapour pressure of deterrents in the working atmosphere is to use well-sealed cabinets. Of course one could open cabinets (and drawers) less frequently but this directly interferes with the use of the collection. Another idea often promulgated, using smaller quantities of deterrent, is misguided through a misunderstanding of the physics of vapour pressure. The imposition of this misguided practice can add greatly to the risk of outbreaks of museum pests as well as to the stresses on curators. In such cases the overall outcome of OH&S edicts can be less health rather than more.

A fundamental principle of the physics of vapour pressure is that the saturation vapour pressure (SVP) of a substance varies only with temperature. The SVP is the maximum amount of a vapour that the air will hold at a given temperature. The presence of other vapours or gasses has no effect (Dalton's Law of Partial Pressures) and neither does the amount (mass or quantity) of the unevaporated substance. So long as some unevaporated substance is present then the vapour pressure in a cabinet after closing rises rapidly to saturation. In other words it makes no difference to the SVP of camphor (for example) whether there are 5g, 50g, 500g or 5000g present in an airtight insect cabinet. At saturation the amount of camphor vapour in the atmosphere will be the same for a given temperature.

What the amount of camphor present will influence is the frequency with which it has to be replaced in order to protect the collection. If only a small amount is present then it may need replacing every few months but if a large amount is present then often years go by until it needs replacing. Frequency of replacement depends principally on the quantity initially present, the temperature, how airtight the cabinets are and how frequently they are opened. So adding only a little camphor significantly increases the work and stress of maintaining a collection.

Cabinets opened more frequently than once a day might never have the camphor reach saturation within the cabinet and this may reduce the effectiveness of the deterrent. In order to quickly raise the vapour pressure of camphor in a cabinet to saturation or near saturation then the surface area of camphor exposed in the cabinet is important. A higher surface area will result in a more rapid rise in the vapour pressure towards saturation in the cabinet but again the amount of camphor is irrelevant. The use of camphor in blocks which are squeezed into the drawer moat minimises the surface area exposed and extends the time then the camphor is less effective as a deterrent.

Relaxing jars exploit this principle where the surface area of water is maximised by the use of cloth steeped in the water to increase the surface area of the water and so increase the effectiveness of the jar when it is frequently opened. Note however that this simply helps the SVP to be reached more quickly and the amount of water is not important as the SVP still depends only on the

temperature. A stable temperature helps greatly in the operation of a relaxing jar and the time taken to relax specimens is much more predictable if the temperature is stable. Varying temperatures make it easier for specimens in the jar to become wet (where water vapour condenses on the specimen). At low temperatures specimens take much longer to relax. Operating a relaxing jar is a balancing act between adequate relaxation, wetting the specimens and retarding mould growth. Mould growth may be controlled by antifungal agents such as chlorocresol or thymol but these also have disadvantages. Another way to evade the problems with larger specimens is by using a short period of relaxation (say 12 hours) to relax appendages such as antennae and legs and then injecting boiling water into the thorax. Again wetting is a danger but can be avoided with practice.

The purpose of insect cabinets is to store specimens in a safe and accessible way. They are as airtight as possible not only to keep pests out but to minimise, within the cabinet, the daily fluctuations in relative humidity which are a feature of the outside atmosphere. Relative humidity is a measure of how saturated with water the atmosphere is. Specifically it is the observed vapour pressure of water expressed as a percentage of the saturated vapour pressure at the same temperature. Were relative humidity fluctuations not reduced then at times of high relative humidity set specimens in the collection would be relaxed and either "spring" or sag. For this reason institutional collections are kept in air-conditioned rooms where the relative humidity is controlled and many collectors opt to operate dehumidifiers in their collection room or not to open their cabinets on rainy days.

Direct access of sunlight onto the sides or tops of cabinets can be disastrous because of re-crystallisation of deterrent onto fragile specimens. This happens particularly with metal cabinets where the metal has a high heat-conductivity. Periodic sunshine on cabinets causes simple heating and cooling inside the cabinet which contributes greatly to re-crystallisation. There is a more subtle effect where the sun, striking the side of the cabinet, heats it up quickly and this increases the saturation vapour pressure of deterrent on that side of the cabinet or drawer. A convection current in the air is established taking saturated vapour to the cool side of the cabinet or drawer where the deterrent condenses. The condensation occurs primarily on seed crystals of deterrent already present and if this happens on fragile insect structures then the large crystals which develop can destroy them. A large crystal growing on a filamentous antenna will soon break it off. Again this effect is not influenced by the amount of deterrent present but only by the temperature difference between the warmest and lowest temperatures and how long temperature differences are maintained.

There is a simple physical explanation for the phenomenon of vapour pressure. Temperature is a measure of the average kinetic energy of the molecules of a substance. These molecules are in constant motion which increases with temperature. Molecules deep within a substance obtain extra kinetic energy from collisions with other molecules and in turn impart energy to molecules they collide with. Molecules at the surface, given an energy boost by collision, may be expelled into the atmosphere and this is what causes vapour pressure. It is a surface effect which explains why the quantity of the substance is unimportant.

Modern school curricula make it easy for people so inclined to avoid a sound education in physics. Those who have done so must seek and take advice on the physical effects of their management decisions.

Acknowledgements

Drs Marianne Horak and Peter Macnicol and Ms Michelle Glover kindly commented on the manuscript.

Australian Journal of Entomology 47 (1) 2008

The Australian Entomological Society publishes the *Australian Journal of Entomology* quarterly. The Entomological Society of Victoria is an affiliated society and will, in future, publish the contents of the Journal for the wider interest of its members.

PREFACE

John Matthiessen & Roger Kitching: Australian Overviews in Entomology

OVERVIEW

Ross H Crozier: Advanced eusociality, kin selection and male haploidy

ECOLOGY

Deborah S Kent: Mycangia of the ambrosia beetle, *Austroplatypus incompertus* (Schedl) (Coleoptera: Curculionidae: Platypodinae)

Christine L Lambkin, Sarah A Fayed, Christopher Manchester, John La Salle, Sonja J Scheffer & David K Yeates: Plant hosts and parasitoid associations of leaf mining flies (Diptera: Agromyzidae) in the Canberra region of Australia

McCabe C Kenny, Alan Wilton & J William O Ballard: Seasonal trade-off between starvation resistance and cold resistance in temperate wild-caught *Drosophila simulans*

CHEMICAL ECOLOGY

Suk-Ling Wee, Ashraf M El-Sayad, Andrew R Gibb, Vanessa Mitchell and David M Suckling: Behavioural and electrophysiological responses of *Pantomorus cervinus* (Boheman) (Coleoptera: Curculionidae) to host plant volatiles

SYSTEMATICS

K Wioletta Tomaszewska & Adam Slipinski: Review of the genus *Myrabolia* Reitter (Coleoptera: Cucujoidea: Myraboliidae)

EVOLUTIONARY ENTOMOLOGY

Lyn G Cook & Penelope J Gullan: Insect, not plant, determines gall morphology in the *Apiomorpha pharetrata* species-group (Hemiptera: Coccoidea).

Michelle L Larsen, J Mark Scriber & Myron P Zalucki: Significance of a new field oviposition record for *Graphium eurypylus* (L.) (Lepidoptera: Papilionidae) on *Michelia champaca* (Magnoliaceae)

PEST MANAGEMENT

Swaminathan Thalavaisundaram, Grant A Herron, Alan D Clift & Harley Rose: Pyrethroid resistance in *Frankliniella occidentalis* (Pergande) (Thysanoptera: Thripidae) and implications for its management in Australia

Gregory J Daglish, Matthew B Head & Paul B Hughes: Field evaluation of spinosad as a grain protectant for stored wheat in Australia: efficacy against *Rhizopertha dominica* (F.) and fate of residues in whole wheat and milling fractions

Notice of Annual General Meeting

Please be advised that Annual General Meeting of the Entomological Society of Victoria Inc. will be held on Tuesday 15 April 2008 at 8PM at the Discovery Centre, Melbourne Museum.

The purpose of the meeting is to receive reports of Council and the election of Office Bearers and Council Members.

Nominations are called for the position of President, two Vice Presidents, Honorary Secretary, Honorary Treasurer, Editor and up to eight other Councillors.

Nominations in Writing and signed by the proposer, seconder and nominee, must be in the hands of the (retiring) secretary seven days prior to the Annual General Meeting.

Nomination forms are available from the Secretary, Steve Curle secretary@entsocvic.org.

Council is particularly keen to receive nominations for the position of Editor and one Councillor who will be prepared to take on the position of Treasurer and Public Officer in 12 month's time.

The Annual General Meeting will be immediately followed by a General Meeting at which Malanie Birchneil will give a talk on 'Drunken Honeybees'

Robert Hilson Fisher, OAM (1922-2007)

I was surprised that the passing of Robert 'Bob' Fisher, a man indelibly melded into Australian butterfly history, went unnoticed in the pages of *Victorian Entomologist* that year. In 1988, he was a recipient of the Le Souef Award, so I feel an obituary, albeit of tardy submission, is essential for the Society's records and News Bulletin coverage. Ideally, someone who knew this butterfly enthusiast well would seem better suited than me for this purpose. However, many of his colleagues in Victoria or members of this Society with whom he had lengthy associations, the late J.C. ('Zoo') Le Souef, Norman ('Tinnie') Tindale, and Nigel Quick being three I knew of, have preceded him into history. Hence, in producing this, I must ethically acknowledge having borrowed heavily in factual content from the writings of others. In particular, I thank Roger Grund for his inference that I write this one. He thoughtfully contacted Jan Forrest who kindly supplied her obituary (2007) for this 'borrowing' purpose, along with some preliminary documents supplied by the Fisher family. And, some additional pieces supplied by Dr Ken Walker and Ted Edwards helped tie up some loose ends. This said, I hope the following account informatively fills a gap, it having a focus fitting the society's historical links with the deceased.

In 1976, Andrew Atkins, Honorary Secretary of the Entomological Society of Victoria (ESV) encouraged me as a young teenager to attend the forthcoming, October, General Meeting. He had highlighted this one in particular as not-to-be-missed, a gathering at which "a visiting expert on South Australian butterflies" would be giving a fine presentation. It was to be a learning experience for me, as a novice of course, and one not forgotten. The minutes record that the guest speaker, Mr Bob Fisher, "gave an excellent talk on the Butterflies of South Australia...illustrated with colour slides of juvenile stages and larval host plants." (*Vic. Ent.* 6: 42). Indeed, the late Bob Fisher was a keen photographer of life histories, and many of his images depicted these stages for the first time, a fine selection later appearing in his two books (Fisher 1978, 1995). The President 'Zoo' Le Souef had introduced Bob, and David Crosby, a well-known expert collector of Victorian butterflies, appropriately gave the vote of thanks. The number in attendance remained unrecorded, but there is a special mention of Professor Remington, an acclaimed lepidopterist then visiting from the USA. Although Bob was one of the very first academic entomologists I met, my personal knowledge of him remained fragmentary. Our second meeting fortuitously occurred during my visit to the South Australian Museum in 1987 as part of my butterfly atlas project, at which time Bob kindly autographed a copy of his tome for me.

Bob was a pharmacist by profession, but his growing reputation as a butterfly authority was becoming an undoubted mantle, at age 53, when he presented his specialist research at that ESV meeting. Soon after, his excellent academic handbook, 'Butterflies of South Australia' (1978) appeared, a compact and scholarly work of 272 pages, which permanently awarded him, a 'gold seal' as an Australian butterfly champion. Clearly a milestone in the field, this endeavour added enormously to the state's knowledge of butterfly life histories and their ecological requirements, and of course, I referred to it regularly on my field trips to SA! It served usefully as a summary of local knowledge. Smithers (1978: 328) remarked, "If one were to try to single out one outstanding contribution which this book makes it would be the attention which is focussed on the immature stages..." concluding that it was indeed, "a fine contribution".

Bob published 25 papers and articles on butterflies, the *Bibliography of Australian Entomology* listing 18 with Australian content, whilst seven other works dwelt with the fauna of neighbouring Pacific Islands or were book reviews. Between 1974 and 1992, thirteen were carried by the *Victorian Entomologist* (Anon. 1989, Daniels 2004). These included his four-part series on collecting butterflies and moths in New Guinea, which appeared in the late 1970s, and one, as an educative piece, on origins of Hawaiian insects (1984). Through his writings Bob wished to enlighten his audience, to pass on what he had learned, and I know he achieved this. Indeed, reading of his (and others) adventures in jungles, teeming with insects, and clambering amidst mysteriously silent cloud-forests, fascinated me as a youngster –perhaps implanting then that very stimulus to venture into these entomological wonderlands, albeit decades later, myself. To his publications can be added nine government commissioned reports he compiled on the butterfly faunas of SA National Parks and local conservation areas. Most people gain expertise and recognition in their field of employment, an occupation in which they spend much of their lives. Yet, to achieve similar or higher status in disciplines of recreational endeavour, as Bob Fisher did, is a measure of his assiduousness. In fact, in 1994, he received the Order of Australia Medal (OAM) for his services to entomology and in particular his work on the conservation of endangered species in SA (Forrest 2007).

Like many of us with an interest in insects, Bob's fascination with butterflies commenced in his boyhood, later enthused by older, more seasoned collectors and experts with whom he mixed and maintained friendships. Field trips with butterfly workers such as Norman Tindale and John Womersley, as well as naturalist R.V. Southcott reinforced his biological interests, and honed his field expertise. Years later Bob would reminisce of his early trips with John, who also doubled as a botanist and with whom he later collected overseas (Fisher 1977: 22). *"We cycled incredible distances in South Australia ... one of our weekend trips might involve up to 200km, and if we came back with five or six species we thought we had done pretty well."* He later re-evaluated his collecting expectations after adventuring into the climatically draining and logistically difficult terrain in New Guinea during his late 40s and early 50s, in the period from 1968 to 1973.

"This was, in fact, my third visit to New Guinea and I had long since learned of the need to make a clear decision concerning one's major objectives. It is just not possible, in New Guinea anyway, to carry a still camera with its endless accessories, a movie camera (with preferably, a tripod), binoculars and a tape recorder, as well as the multitude of jars and tubes and boxes that the lepidopterist seems to think he needs along with his net. ... And so I travelled light, reluctantly passing up many opportunities to record in various ways the other things I saw and heard." (Fisher 1977a: 55).

Over his life, Bob collected extensively in Australia and New Guinea, rearing most of the South Australian species. In addition, from 1964 to 1987 he contributed over 300 botanical specimens to the State herbarium of SA, plants he had found to be larval hosts of particular butterflies. He donated his collection of some 3600 butterfly specimens to the South Australian Museum in 1986, at age 63, the museum then awarding him recognition as an Honorary Research Associate, a title held for 20 years. Shortly before this, in 1983, Bob had noticed an increasing loss of habitat in SA, and its adverse effects on butterfly abundance and diversity. He then redressed his scientific

interests in light of this new pressing need for conservation. In 1989, he wrote in the *Victorian Entomologist* (p.30) of his concerns and his new ethical persuasion. "In the last six years or so, rather than continuing to collect specimens, I have been particularly involved in photographing the complete life histories of those Australian species that have been available to me." Bob contributed to many displays at the SA Museum and his photographic collections are now archived with that repository. In his retirement, he reorganised their butterfly collection and incorporated his own specimens. By 1999, Butterfly Conservation SA Inc. appointed him as an honorary member.

Of Bob's two books, his first remains unrivalled. I read it from cover to cover soon after its release, impressed with the quantity of new information presented. The meticulous documentation accompanying his illustrated specimens, giving museum label data for the first time, a trend now standard these days, was then innovative. In the footsteps of McCubbin (1971), its focus on species ecology, habitat and behaviour was creative of change and renewed insight since the Waterhouse era of taxonomic emphasis. His second book, a field guide aimed to fill an existing market gap, was somewhat disappointing in my opinion (Dunn 1996), and atop of which another would soon arise. In this regard, in 1995, the CSIRO had appointed him as a regional adviser for the production of *Butterflies of Australia: Their Identification, Biology and Distribution*, from which Braby's (2004) comprehensive field-guide would evolve. Clearly, Bob's life work has left a legacy for butterfly research and serves as a foundation stone on which many will build. His efforts in rearing, recording and photographing the life histories of South Australian butterflies have filled gaps in the knowledge of the species concerned. He will be remembered through his publications by those who refer to them – the many citations of his works in *Butterflies of Australia* (Braby 2000) already attest to this.

It was on Australia Day 2007, that this OAM recipient died aged 84. Our members will remember Bob as having been an occasional contributor to the *Victorian Entomologist*, and as an interstate member of the Society for many years during his period of greatest productivity.

Kelvyn L. Dunn

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OFFICE BEARERS

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ph. 9571 8958 (AH)
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- HON EDITOR:** *Daniel Dobrosak*, 66 Wiltonvale Avenue, Hoppers Crossing, 3029.
Ph. 9695 6577 (BH) ph 9749 1476 (AH). editor@entsocvic.org.au.
- EXCURSIONS SEC:** *Peter Carwardine*, 5/154 Grange Road, Carnegie 3163.
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- PUBLIC OFFICER:** *Ian Endersby*, 56 Looker Road, Montmorency 3094. ph. 9435 4781 (AH)
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ph. 0419 875 977 dstewa27@optusnet.com.au
- WEBMASTER:** *Daniel Dobrosak*, 66 Wiltonvale Avenue, Hoppers Crossing, 3029.
ph 9695 6577 (BH) ph 9749 1476 (AH). suturalis@yahoo.com
- COUNCILLORS:** *Dr. Ken Walker, Peter Lillywhite*

CONTRIBUTIONS TO THE VICTORIAN ENTOMOLOGIST

The Society welcomes contributions of articles, papers or notes pertaining to any aspect of entomology for publication in this Bulletin. Contributions are not restricted to members but are invited from all who have an interest. Material submitted should be responsible and original. The Editor reserves the right to have articles refereed. Statements and opinions expressed are the responsibility of the respective authors and do not necessarily reflect the policies of the Society.

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DIARY OF COMING EVENTS

Tuesday April 15th
Annual General Meeting

Includes presentation from Melanie Birchnell – Drunken Honeybees

Tuesday May 20th
Council Meeting

Tuesday June 17th
Nature Illustration – Insects that pollinate plants.

Scientific names contained in this document are *not* intended for permanent scientific record, and are not published for the purposes of nomenclature within the meaning of the *International Code of Zoological Nomenclature*, Article 8(b). Contributions may be refereed, and authors alone are responsible for the views expressed.

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